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Phyto-chemical profiling and in vitro anti-arthritic activity of marine red algae *Gelidiella acerosa*

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Marine natural products have attracted the attention of biologists and chemists the world over for the last five decades. To date approximately 16,000 marine natural products have been isolated from marine organisms. The macro algae occupy a potentially important place as a source of biomedical compounds. *Gelidiella acerosa* a marine red algae is an abundantly growing seaweed in the inter tidal region of Gulf of Mannar, Southeast coast of India. *Gelidiella acerosa* has been used as gelling agent to make jellies, calorie free cookery ingredient, valuable antioxidant for treating ROS mediated diseases and useful post-coital contraceptive. In the present study, in vitro anti-arthritic activity of the ethyl acetate extract of the seaweed *Gelidiella acerosa* was investigated by protein denaturation method. Anti- denaturation study is performed by using bovine serum albumin (BSA). When BSA is heated it undergoes denaturation and express antigens associated with type- III hypersensitivity reaction and that is related to disease such as serum sickness, rheumatoid arthritis and system lupus erythematosus The production of auto antigen in certain arthritic disease may be due to denaturation of protein. Phytochemical profiling was carried out for the ethyl acetate extract using Gas chromatography-Mass Spectroscopy (Agilent-7890A GC instrument coupled with MS-5975) and NIST-MS library. The investigation is based on the need for newer anti-inflammatory agents from natural source with potent activity and lesser side effects as substitutes for chemical therapeutics. The red algae *Gelidiella acerosa* was collected from Mandapam area ,Rameshwaram. Authenticated by Dr. V. Krishnamurthy, Krishnamurthy Institute of algalogy, Chennai, TamilNadu. They were washed, shade dried and crushed in to powder. The powdered samples was subjected to exhaustive successive extraction with solvents of increasing polarity (Petroleum ether, chloroform, ethylacetate) by maceration. The filtrate was concentrated and dried under reduced pressure in a rotary evaporator and stored in a desiccator and the ethyl acetate extract was used to test Anti-arthritic activity. The principle involved in the present study is the ability of ethyl acetate extract of *Gelidiella acerosa* to prevent the production of auto antigen. From the results, it can be stated that ethyl acetate extract are capable of controlling and inhibiting denaturation of protein in comparable with that of the standard Diclofenac sodium. Nearly twenty nine bioactive chemical compounds were identified in the ethyl acetate extract by GC-MS Analysis. Out of which n-Hexadecanoic acid, reported to have antiinflammatory property was found to be present. Therefore, our study support the use of active constituents from *Gelidiella acerosa* in treating inflammation and it might be helpful in preventing or slowing the progress of various inflammatory disease.

Biography

Vuyyuru Praveen Kumar Reddy is studing PharmD (Doctor of pharmacy) final year in Sri Ramachandera University.

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